Claims

1. (Previously presented) A method for analyzing a gas sample, comprising:

providing a gas sample or converting a sample to a gas sample;

increasing pressure applied to the sample to compress the sample to a smaller volume and provide a pneumatically focused gas sample; and

analyzing the pneumatically focused gas sample by gas chromatography.

2. (Previously presented) The method according to claim 1 where the gas sample is pneumatically focused concurrently with or prior to reaching a separatory column.

Claims 3-7 (Canceled)

8. (Original) The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 100 psi to about 15,000 psi.

9. (Canceled)

10. (Original) The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 200 psi to about 2,000 psi.

11. (Original) The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 300 psi to about 700 psi.

12. (Original) The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample is accomplished using a gas selected from the group consisting of hydrogen, helium, nitrogen, argon, carbon dioxide, air, or mixtures thereof.

13. (Previously presented) The method according to claim 1 where increasing the pressure to pneumatically focus the gas sample is accomplished using a focusing or carrier gas containing an internal standard.

14. (Original) The method according to claim 1 where methane in the sample is used as an internal standard.

Claims 15-17 (Canceled)

18. (Original) The method according to claim 1 where the gas sample is pneumatically focused using a carrier gas or a compressor at a first pressure and further comprising rapidly decreasing or increasing pressure between a first and second pressure.

19. (Canceled)

20. (Canceled)

21. (Original) The method according to claim 1 where analyzing the pneumatically focused sample comprises cooling a head portion of the column prior to injecting the pneumatically focused sample onto the column.

22. (Original) The method according to claim 1 where analyzing the pneumatically focused sample comprises heating the column subsequent to injecting the pneumatically focused sample onto the column.

23. (Original) The method according to claim 1 where analyzing the pneumatically focused sample includes eluting a pneumatically focused sample with a first carrier gas, and then eluting the column with a second carrier gas.

Claims 24-27 (Canceled)

28. (Original) The method according to claim 1 and further comprising continuously analyzing pneumatically focused samples.

29. (Original) The method according to claim 1 and further comprising averaging individual chromatograms of pneumatically focused samples.

30. (Original) The method according to claim 29 where peak locations determined from the average are used to integrate peak areas in individual chromatograms contributing to the average.

31. (Previously presented) The method according to claim 1 where analytes from the pneumatically focused sample are determined by a detector selected from the group consisting of FID, IR, FTIR, NDIR, ECD, TCD, NPD, FPD, UV/Visible detectors and combinations thereof.

32. (Original) The method according to claim 1 where the pneumatically focused sample is parallel or serially injected onto plural parallel or serial separatory columns.

33. (Previously presented) The method according to claim 32 where the pneumatically focused sample is analyzed by 2-dimensional chromatography.

34. (Original) The method according to claim 32 where the pneumatically focused sample is analyzed by comprehensive chromatography.

35. (Previously presented) The method of claim 1 where the providing the sample, the increasing pressure on the sample, and the analyzing the sample are automated.

36. (Previously presented) The method according to claim 35 where the providing the sample, the increasing pressure on the sample, and the analyzing the sample are computer controlled.

37-46. (Canceled)

47. (Original) The method according to claim 1 where portions of the pneumatically focused sample are fed to separate columns upstream of separate, plural detectors.

48. (Original) The method according to claim 47 where the detectors are connected in series.

49. (Original) The method according to claim 47 where the plural detectors are connected in parallel.

50. (Original) The method according to claim 1 where the pneumatically focused sample is fed to plural separatory columns.

51. (Canceled)

52. (Original) The method according to claim 50 where the separatory columns are connected in parallel.

Claims 53-68 (Canceled)

69. (Previously presented) The method according to claim 1 where the gas sample is provided as a pre-stored gaseous sample.

70. (Previously presented) The method according to claim 1 where the gas sample includes a material selected from the group of air toxics, VOCs, OVOCs, metabolites, anesthetics, and combinations thereof.

71. (Original) The method according to claim 1 where the gas sample is collected at a boundary of a site for fence-line monitoring of analytes.

72. (Original) The method according to claim 1 where providing the gaseous sample comprises providing the sample to a column within a period of less than one minute.

73. (Previously presented) The method according to claim 72 and providing the sample to a column within a period of less than about 1 second.

74. (Previously presented) The method according to claim 73 and providing the sample to a column within a period of less than about 1 millisecond.

75. (Canceled)

76. (Original) The method according to claim 1 and further comprising determining the directional distribution of pollution sources.

77. (Original) The method according to claim 1 and further comprising using a Gaussian Plume model to determine source location, emission rate, or both.

78. (Original) The method according to claim 1 and further comprising determining analyte source location by triangulation.

79. (Original) The method according to claim 1 and further comprising removing materials from the gaseous sample prior to pneumatically focusing the sample.

80. (Previously presented) The method according to claim 79 where materials removed from the sample are selected from the group consisting of water vapor, aerosols, ozone, NO_2, and combinations thereof.

81. (Original) The method according to claim 79 where the materials are removed by filtering, absorption, vortexing, and combinations thereof.

82. (Previously presented) The method according to claim 1 further comprising condensing water vapor in the gaseous sample by pneumatic focusing.

83. (Original) The method according to claim 82 where the condensed water vapor is removed prior to analyzing the gaseous sample using an analytical device.

84. (Previously presented) The method according to claim 83 where the condensed water vapor contains water-soluble analytes, and such water-soluble analytes are collected for continuous or discontinuous subsequent analysis.

85. (Canceled)

86. (Canceled)

87. (Original) The method according to claim 13 where methane is added to the focusing-carrier gas.

88. (Canceled)

89. (Original) The method according to claim 1 where the pneumatically focused sample is separated into aqueous and gaseous components which are separately analyzed.

90. (Previously presented) The method according to claim 1 where the pneumatically focused sample

is a gas; and

is subsequently cryogenically liquefied.

91. (Original) The method according to claim 1 wherein pneumatic focusing is used to make eddy correlation measurements to quantify fluxes.

92. (Previously presented) The method according to claim 10 where increasing the pressure to pneumatically focus the gas sample comprises increasing the pressure of the sample to a pressure of from about 300 psi to about 1,500 psi.

93. (Canceled)

94. (Previously presented) The method according to claim 1 where portions of the pneumatically focused sample are fed to separate columns upstream of a single detector.

95. (Canceled)

96. (Previously presented) The method according to claim 94 where the separate columns are connected in parallel.

97. (Previously presented) The method according to claim 1 where analyzing the pneumatically focused gas sample by gas chromatography comprises analyzing the sample using a packed capillary column.

98. (Previously presented) The method according to claim 2 where the separatory column comprises a packed capillary column.

99. (Previously presented) The method according to claim 32 where at least one of the columns comprises a packed capillary column.

100. (Previously presented) The method according to claim 47 where at least one of the separate columns comprises a packed capillary column.

101. (Previously presented) The method according to claim 50 where at least one of the separatory columns comprises a packed capillary column.

102. (Previously presented) The method according to claim 51 where at least one of the separatory columns comprises a packed capillary column.

103. (Previously presented) The method according to claim 52 where at least one of the separatory columns comprises a packed capillary column.

104. (Previously presented) The method according to claim 94 where at least one of the separate columns comprises a packed capillary column.

105. (Previously presented) A method for analyzing VOCs, comprising:

compressing a gas sample comprising VOCs to a smaller volume in a sample collection tube by increasing pressure applied to the sample using a carrier-pneumatic focusing gas to provide a pneumatically focused sample;

separating VOC components of the pneumatically focused sample on a gas chromatographic column; and

detecting the separated VOC components to provide an analysis of the VOC content of the sample.

106. (Previously presented) The method according to claim 105 where increasing pressure applied to the sample comprises increasing the pressure to a pressure of from about 100 psi to about 15,000 psi.

107. (Previously presented) The method according to claim 106 where increasing pressure applied to the sample comprises increasing the pressure to a pressure of from about 200 psi to about 2,000 psi.

108. (Previously presented) The method according to claim 105 where the gas chromatographic column comprises a packed capillary column.

109. (Previously presented) The method according to claim 105 where detecting the separated VOC components comprises detecting the components using an FID detector.

110. (Previously presented) The method according to claim 105 where the method is automated.

111. (Previously presented) The method according to claim 110 where the method is computer controlled.

112. . (Previously presented) The method according to claim 1 further comprising controlling a flow rate of a carrier gas through a gas chromatographic column using a valve downstream of the column.

113. (Previously presented) The method according to claim 1 further comprising controlling a flow rate of a carrier gas through a gas chromatographic column using a valve downstream of a detector.

Please add the following new claims:

--114. (New) The method according to claim 1 where the gas sample is an air sample.

115. (New) The method according to claim 1 where the gas sample is a breath sample.

116. (New) The method according to claim 1 where providing a gas sample comprises continuously providing an air sample for pollution analysis.

117. (New) The method according to claim 1 where providing a gas sample comprises continuously providing a breath sample for analysis.

118. (New) The method according to claim 1 where the gas sample is an exhalation from a respiratory organism.

119. (New) The method according to claim 1 where the sample is a water sample.--